serratus anterior are microsurgically anastomosed to the facial artery and vein. The free end of the sural nerve graft is repaired to the long thoracic nerve of the serratus anterior muscle.

The nerve will eventually grow into the newly transplanted muscle and functionally innervate the muscle. Eventually, when the patient moves the unparalyzed side of the face, nerve impulses will travel across the nerve graft and stimulate the transplanted serratus anterior muscle. This approach can restore some spontaneous animation, particularly in patients younger than 50.

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Soft Tissue Augmentation

IDENTIFYING A SAFE, lasting substance for use in soft tissue augmentation continues to challenge plastic surgeons and dermatologists. The most widely accepted substrate for such use is Zyderm collagen implant, approved by the Food and Drug Administration (FDA) in 1981. It is composed of enzymatically purified bovine collagen suspended in a saline solution and comes in two concentrations, Zyderm I and II. Both are recommended for the diminution of facial wrinkles, acne scars, and other depressed scars. Neither is recommended for larger defects. Correction is transient, and touch-ups are necessary every 4 to 12 months to maintain correction. Zyplast, collagen cross-linked by glutaraldehyde, was introduced in 1985. The cross-linking stabilizes the collagen against degradation but not to the extent initially hoped. Touch-ups are required on a 4- to 24-month basis. The use of Zyplast is recommended for the correction of deeper contour deficiencies. Pretreatment skin tests to determine hypersensitivity are necessary. It is now recommended the skin test be repeated at four weeks to decrease the incidence of treatment-associated hypersensitivity reactions.

There has been a continual interest in autologous fat grafting since its first use in 1893. Doubts linger as to the stability of correction beyond three to four months, and many still doubt the efficacy of this technique. Small fat grafts (4 to 6 mm in diameter) have been injected in a manner similar to the use of collagen with variable results. Supporters of the technique argue that correction lasts longer and sensitivity reactions are less severe. All agree that resorption will occur, and overcorrection and touch-ups are necessary. Inflammatory reactions, firmness, and lumpiness have been reported. In the laboratory, an adipocyte precursor with the potential to differentiate into mature adipocytes has been identified. Single-cell suspensions of these cells may show promise in creating true fat pads where injected.

Fibrel gelatin matrix implant has been approved by the FDA for the treatment of depressed scars. Reports claim an average loss of correction by 20% at two years. Local reactions have been mild, and no other adverse reactions have yet been reported. Medical grade silicone (polydimethylsiloxane) is not commercially available but continues to be used by a few practitioners. When used, proper technique is essential; there is no room for error. Technique-related problems and severe local reactions to the silicone have been reported.

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Maxillofacial Trauma

THE DIAGNOSIS, management, and treatment of complex craniomaxillofacial trauma are challenging for plastic and reconstructive surgeons. Maxillofacial trauma is usually considered a phenomenon of youth, but current population trends indicate the average age is increasing. There is a 50% longer median hospital stay in patients older than 65 compared with younger groups. This increased time is due to multisystem injuries, rather than the extent of maxillofacial fracture. Periodontal disease, bone resorption, and dental restorations or missing teeth are much more frequent in the geriatric age group. Rigid internal miniplate fixation eliminates some of the problems of intermaxillary wire fixation, resulting in fewer complications—that is, less risk to crown or bridge work, less weight loss, and decreased breathing problems.

The timing and staging of craniofacial fractures repair have traditionally been weighed against other possible life-threatening conditions. The early repair of facial fractures does not appear to affect adversely the recovery or outcome in patients with head injuries, however.

Much attention has recently been focused on rigid fixation (miniplates) as a method of improving fracture healing. It has been shown that fixation by means of interfragmental stabilization and compression tends to neutralize torsional and sheer forces, allowing primary bone healing and union. Rigid fixation is therefore indicated in cases where onlay bone grafts may be exposed to motion, shear, and torsional forces.

Recent contributions clearly substantiate the basic principles of maxillofacial treatment: accurate diagnosis, early anatomic fracture reduction, stable osseous fixation, and the restoration of preinjury occlusion. The care of older patients will continue to be challenging.

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